

SHORT COMMUNICATION

MEGASTEGES SEPTENTRIONALIS (ETHERIDGE, 1907), A PERMIAN BRACHIOPOD FROM THE NORTHERN TERRITORY REDESCRIBED

Robert Etheridge Junior's (1907) *Aulosteges baracoodensis* var. *septentrionalis* was not discussed by Coleman (1957) in his extensive study of Western Australian aulostegid brachiopods. Etheridge's (1907) original publication is rather obscure and it was not realized until recently that most of the type material from his Port Keats collection is housed in the South Australian Museum. Hosking (1933) had earlier been unable to locate most of the specimens. The purpose of the present note is to redescribe and reillustrate most of Etheridge's (1907) specimens, elevate the variety *septentrionalis* to full specific rank and assign the species to *Megasteges* Waterhouse (1975).

STRATIGRAPHY, LOCALITIES AND AGE

The onshore Permian stratigraphy of the Port Keats District, Northern Territory, has been elucidated by Thomas (1957) who reviewed earlier work and discussed the faunal zones present in the sequence. Dickins *et al.* (1972) reviewed earlier work and recorded an additional faunal horizon. The type material of *Megasteges septentrionalis*, from Cape Dombey, comes from the Upper Marine Beds of the Port Keats Group and is associated with fossil Assemblage D, as discussed by Thomas (1957, 1958). Assemblage D is Early Tatarian or Chhidruan in age (i.e. immediately younger than Kazanian) and is readily correlated with the faunas of the Hardman Formation of the Canning Basin and the Chhidru Formation of the Salt Range, Pakistan (Thomas, 1958). A specimen from Cape Ford assigned to *Strophalosia?* sp. by Etheridge (1907) is reillustrated herein and is interpreted as an incomplete dorsal valve of *Megasteges septentrionalis*. The Permian strata at Cape Ford appear to be the same age as those at Cape Dombey (Dickins *et al.* 1972).

SYSTEMATIC PALAEOZOOLOGY

Superfamily AULOSTEGACEA Muir-Wood & Cooper 1960  
 Family AULOSTEGIDAE Muir-Wood & Cooper 1960  
 Genus *Megasteges* Waterhouse 1975

TYPE SPECIES: *Megasteges nepalensis* Waterhouse 1975.

DIAGNOSIS: The diagnosis provided by Waterhouse (1975, p. 6) is accepted except for the modification that the huge ventral diductor scars do not always fuse anteriorly of the ventral adductor scars.

DISCUSSION: *Megasteges* has been discussed and illustrated by Waterhouse (1978) and has since been recognised in the Permian faunas of Queensland (Waterhouse *et al.* 1983).

*Megasteges septentrionalis* (Etheridge 1907)

Fig. 1A-F

1907 *Aulosteges baracoodensis* var. *septentrionalis* Etheridge p. 6, pl. 1, figs. 1-5.

1907 *Strophalosia?* sp. Etheridge, p. 6, pl. 1, fig. 6.

1933 *Aulosteges baracoodensis* var. *septentrionalis* Etheridge; Hosking, p. 35.

1957 *Aulosteges ingens* Hosking; Coleman (*partim.*), p. 43, pl. 3, figs. 5, 7, 9, 10 (*non cet.*).

1957 *Aulosteges reclinis* Coleman (*partim.*), p. 38, pl. 6, fig. 1 (*non cet.*).

cf. 1957 *Aulosteges fairbridgei* Coleman (*partim.*), p. 40, figs. 11-12 (*non cet.*).

LECTOTYPE: SM P2135 an internal mould of a conjoined shell (Fig. 1A-B), chosen herein.

MATERIAL: Etheridge's re-examined type material consists of: SM P2135, the lectotype; SM P2136, a natural cast of a decorated shell; SM P2137, a natural cast of a ventral valve and SM P2125, a natural cast of an incomplete dorsal valve interior (figured by Etheridge as *Strophalosia?* sp.).

MEASUREMENTS (in mm): See Table 1.

DIAGNOSIS: Large *Megasteges* with variable outline. Suleus gentle. Shell outline rounded in maturity.

DESCRIPTION: Shell large, variable in outline although rounded in maturity. Ventral umbo distinct and may be twisted over high, variably inclined, ventral interarea. Interarea gently concave and bisected by poorly known, high, narrow, triangular convex pseudodeltidium. Dorsal valve gently convex posteriorly, concave, around anterior visceral disc and curves abruptly into poorly known, geniculate trail. Dorsal valve appears to lack interarea. Ventral sulcus, which arises some 2 cm in front of umbonal tip, shallow, wide and gently rounded in cross-section. Ventral spines which cover the entire valve, arranged in illdefined quineunx. Spine base elongate (up to 8 mm) and spines were probably recumbent. Spine bases up to 1.1 mm wide.

Ventral adductor platform gently raised, relatively narrow, scored with ridges and grooves and subdivided by thin median groove. Diductor impressions large, laterally and anteriorly placed but not fused in front of adductors; marked by ridges and grooves radiating forward.

Cardinal process large with two anterior lateral supports. Median septum arises in between lateral supports and persists anteriorly for at least seven eighths of valve length. Dorsal ad-

TABLE 1

MEASUREMENTS OF *Megasteges septentrionalis*. \* = lectotype; e = estimate; + = incomplete specimen

Specimen Number	Hinge Width	Maximum Width	Ventral Length	Dorsal Length	Thickness	Length Dorsal Septum
SM P2135*	35e	67	69	57	24	43 +
SM P2136	28	52	59	45	—	38
SM P2137	—	47	63	—	—	—
SM P2125	—	50	—	41 +	—	34 +



A



B



C



D



E



F



Fig. 1—A-F, *Megasteges septentrionalis* (Etheridge): A-F, from Upper Marine Beds, Port Keats Group, Bonaparte Gulf Basin. A-C, SM P2135 lectotype, internal mould of shell in dorsal and ventral views and enlargement of latex cast of dorsal interior,  $\times 1$ ,  $\times 1$  and  $\times 3$ . D, SM P2125, natural cast of dorsal valve interior,  $\times 1$  (figured by Etheridge, 1907, as *Strophalosia?* sp.). E, SM P2136, natural cast of decorticated shell in dorsal view,  $\times 1$ . F, SM P2137, natural cast of ventral valve in ventral view,  $\times 1$ .

ductor scars strongly dendritic, poorly differentiated. Brachial ridges unknown.

Discussion: *Megasteges septentrionalis* is a variable species and large collections are required in order to elucidate the ontogeny of the species. Figured specimens of aulostegids from the Port Keats Area attributed by Coleman (1957) to *Aulosteges ingens* appear to belong to Etheridge's species on the basis of dorsal interior features. Species described by Coleman (1957) such as *Aulosteges fairbridgei* and *Aulosteges reclinis*, both from the Hardman Formation of the Canning Basin, share much in common with *M. septentrionalis*, and may be junior subjective synonyms. However, only the analysis of large collections from both the Hardman Formation and the Upper Marine Beds, Port Keats Group will clarify any such synonymy, a task beyond the purpose of this note.

*Megasteges nepalensis* Waterhouse (1975, 1978) is distinguished from *M. septentrionalis* by means of its more pronounced sulcus and ventral diductor scars that fuse anteriorly of the ventral adductor scars. *M. randsi* (Hill, 1950 pl. 6 figs. 1-2; see also Waterhouse *et al.*, 1983) recalls elongate examples of *septentrionalis* but is known only from ventral valves.

The ventral valve of *M. septentrionalis* stated by Hosking (1933) to be housed in the Australian Museum cannot now be traced (Mr. R. K. Jones, pers. comm. 30-05-85).

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#### REFERENCES

- COLEMAN, P. J., 1957. Permian Productacea of Western Australia. *Bull. Bur. Miner. Resour. Geol. Geophys. Aust.* 40: 1-188.
- DICKINS, J. M., ROBERTS, J. & VEEVERS, J. J., 1972. Permian and Mesozoic Geology of the northwestern part of the Bonaparte Gulf Basin. *Bull. Bur. Miner. Resour. Geol. Geophys. Aust.* 116: 17-27.
- ETHERIDGE, R., 1907. Official contributions to the Palaeontology of South Australia. No. 17—Permian-Carboniferous fossils of Cape Dombey, Hyland Bay and Cape Ford, Anson Bay. *South Australian Parl. Pap. Blue Book, 1907.* 54: 5-6.
- HILL, D., 1950. The Productinae of the Artinskian Cracow fauna of Queensland. *Pap. Dep. Geol. Univ. Qd.* 3(2): 1-27.
- HOSKING, L. F. V., 1933. Specific naming of Aulosteges from Western Australia. *J. Roy. Soc. W. Aust.* 19: 33-41.
- MUIR-WOOD, H. M. & COOPER, G. A., 1960. Morphology, classification and life habits of the Productoidea (Brachiopod). *Mem. geol. Soc. Amer.* 81: i-xi, 1-447.
- THOMAS, G. A., 1957. Oldhaminid brachiopods in the Permian of Northern Australia. *J. Palaeont. Soc. India.* 2: 174-182.
- THOMAS, G. A., 1958. Stratigraphy and palaeontology of the Port Keats Area, Northern Territory. *Aust. New Zealand Assoc. Advmt. Sci., 1958 Cong. Section C, Absts, Lectures, Papers,* pp. 1-5.
- WATERHOUSE, J. B., 1975. New Permian and Triassic brachiopod taxa. *Pap. Dep. Geol. Univ. Qd.* 7(1): 1-23.
- WATERHOUSE, J. B., 1978. Permian Brachiopoda and Mollusca from North West Nepal. *Palaeontographica Abt. A.* 160: 1-175.
- WATERHOUSE, J. B., BRIGGS, D. J. C. & PARFREY, S. M., 1983. Major faunal assemblages in the Early Permian Tiverton Formation near Homevale Homestead, Northern Bowen Basin, Queensland. In *Permian Geology of Queensland.* Geol. Soc. Aust., Qd Division, Brisbane, pp. 121-138.

N. W. ARCHBOLD  
Department of Geology,  
University of Melbourne,  
Parkville,  
Victoria, 3052.